

## PATENT COOPERATION TREATY

**PCT****INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference YL04023PCT	<b>FOR FURTHER ACTION</b>		See Form PCT/IPEA/416
International application No. <b>PCT/KR2004/002993</b>	International filing date ( <i>day/month/year</i> ) <b>18 NOVEMBER 2004 (18.11.2004)</b>	Priority date ( <i>day/month/year</i> ) 10 DECEMBER 2003 (10.12.2003)	
International Patent Classification (IPC) or national classification and IPC <b>C12N 1/20(2006.01)i</b>			
Applicant <b>CJ CORP. et al</b>			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>3</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			

Date of submission of the demand <b>06 MAY 2005 (06.05.2005)</b>	Date of completion of this report <b>02 JANUARY 2006 (02.01.2006)</b>
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## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/KR2004/002993

## Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- This report is based on translations from the original language into the following language English, which is the language of a translation furnished for the purposes of:
- international search (under Rules 12.3 and 23.1(b))  
 publication of the international application (under Rule 12.4)  
 international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

- the international application as originally filed/furnished

- the description:

pages \_\_\_\_\_ as originally filed/furnished  
 pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

- the claims:

pages \_\_\_\_\_ as originally filed/furnished  
 pages\* \_\_\_\_\_ as amended (together with any statement) under Article 19

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

- the drawings:

pages \_\_\_\_\_ as originally filed/furnished  
 pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

- the sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3.  The amendments have resulted in the cancellation of:

- the description, pages \_\_\_\_\_  
 the claims, Nos. \_\_\_\_\_  
 the drawings, sheets \_\_\_\_\_  
 the sequence listing (*specify*) : \_\_\_\_\_  
 any table(s) related to sequence listing (*specify*) : \_\_\_\_\_

4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- the description, pages \_\_\_\_\_  
 the claims, Nos. \_\_\_\_\_  
 the drawings, sheets \_\_\_\_\_  
 the sequence listing (*specify*) : \_\_\_\_\_  
 any table(s) related to sequence listing (*specify*) : \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/KR2004/002993

**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims	1-3	YES
	Claims		NO
Inventive step (IS)	Claims	1-3	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-3	YES
	Claims		NO

**2. Citations and explanations (Rule 70.7)**

The following documents have been considered for the purpose of this report:

D1: EP 0350970 A1 (KYOWA HAKKO KOGYO CO., LTD.), 24 Feb. 1984.

D2: EP 1029926 A1 (KYOWA HAKKO KOGYO CO., LTD.), 08 Feb. 2000.

**I. Novelty and Inventive Step**

Claims 1-3 relate to a mutant strain, *Corynebacterium ammoniagenes* having a resistance to 5'-fluorotryptophan and producing 5'-xanthyllic acid; and a method of producing 5'-xanthyllic acid characterized by using the same microorganism.

D1 discloses a new microorganism, *Corynebacterium glutamicum* having a resistance to antibiotics of the type which inhibit energy metabolism and producing 5'-xanthyllic acid; and a method for producing 5'-xanthyllic acid using the same. In D2, process for producing 5'-xanthyllic acid and microorganisms useful in said process are described. Compared with the present invention, none of the above-mentioned prior art documents disclose the mutant strain of the present application and the method of producing 5'-xanthyllic acid using the same microorganism. In addition, the present invention is not considered to be easily invented by a person skilled in the art by using the teachings of D1 and D2.

Therefore, the subject matter of claims 1-3 of the present application comply with the requirements of novelty and inventive step under PCT Article 33(2) and (3).

**II. Industrial Applicability**

There is no reason for forming a negative opinion about the industrial applicability of this invention. Consequently, claims 1-3 appear to meet the requirement of PCT Article 33(4).